AMENDMENT TO CLAIMS

1. (Currently amended) A method of reducing chromatic bleeding artifacts in a digital image, the method comprising ~~modifying~~ reducing chrominance values of at least some pixels in the digital image, the chrominance value of a pixel reduced ~~pixels being modified~~ according to its ~~luminance values and~~ chromatic dynamic range.

2. (Original) The method of claim 1, wherein the chromatic dynamic range for each pixel is a function of minimum and maximum chroma values of a local pixel neighborhood, whereby the chromatic dynamic range is determined on a pixel-by-pixel basis.

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3. (Original) The method of claim 1, wherein the chrominance values of a pixel are scaled by the ratio C'/C if the original chroma value (C) of the pixel is modified, where C' is the new chroma value.

4. (Currently amended) The method of claim 1, wherein a chroma value of a pixel is modified to no more than ~~the minimum of~~ a chromatic modulus (C_0) derived from the local neighborhood ~~if the pixel has a high luminance, and wherein the chroma value of a pixel is not modified if the pixel has a small dynamic range~~.

5. (Currently amended) A method of reducing chromatic bleeding artifacts in a digital image, the method comprising modifying chrominance values of at least some pixels in the digital image, the pixels being modified according to their luminance values and chromatic dynamic ranges ~~The method of claim 1, wherein the chrominance values of at least some pixels are modified~~ by $C' = C - f(Y, D) \cdot (C - C_0)$, where C' is the new chroma value of the pixel, C is the original chroma value of the pixel, Y is the luminance of the pixel, D is the

chromatic dynamic range, C_0 is a chromatic modulus having a value between zero and C_m, C_m is the minimum chroma of the local neighborhood for the pixel, and $f(Y,D)$ is a parametric expression that determines the amount of relative chroma reduction.

6. (Original) The method of claim 5, wherein $f(Y,D)$ complies with $f(Y,D) \rightarrow 1$ for $Y \rightarrow 1$; and $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$.

7. (Original) The method of claim 6, wherein $f(Y,D)$ also complies with $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$ and $Y \rightarrow 1$.

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8. (Original) The method of claim 5, wherein $C_0 = \max[C_m - D, 0]$.

9. (Original) The method of claim 5, wherein the modulus $C_0 = C_m$.

10. (Original) The method of claim 5, wherein $C_0 = 0$.

11. (Original) The method of claim 5, wherein $f(Y,D) = \max\left[1 - \alpha(\frac{1-Y}{D}), 0\right]$, where α is a positive term.

12. (Original) The method of claim 11, wherein $C' = C$ if $Y < (1 - D/\alpha)$.

13. (Currently amended) A method of reducing chromatic bleeding artifacts in a digital image, the method comprising modifying chrominance values of at least some pixels in the digital image, the pixels being modified according to their chromatic dynamic ranges and luminance values~~The method of claim 1~~, wherein each pixel of interest is mapped by:

determining a chromatic dynamic range;

leaving the pixel unmodified if the chromatic dynamic range is less than a predetermined threshold; and

computing a parametric function if the chromatic dynamic range is greater than the threshold and using the parametric function to modify the chrominance value of the pixel, the parametric function being a function of the luminance and local chromatic dynamic range of the pixel.

14. (Original) The method of claim 1, wherein the digital image is reconstructed from subsampled chrominance values; and wherein the chromatic dynamic range is determined from subsampled chrominance values.

15. (Currently amended) A method of reconstructing a digital image from a luminance channel and subsampled chrominance channels, the method comprising:

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interpolating the chrominance channels; and

reducing chromatic bleeding artifacts from the interpolated chrominance channels by ~~modifying~~ selectively reducing chrominance values of at least some pixels in the digital image, the pixels being ~~modified~~ selectively reduced according to ~~its luminance values and~~ chromatic dynamic ranges.

16. (Currently amended) Apparatus for reducing chromatic bleeding artifacts in a digital image, the apparatus comprising a processor for selectively reducing ~~modifying~~ chrominance values of ~~at least some~~ pixels in the digital image, the pixels being selectively reduced ~~modified~~ according to ~~luminance values and~~ chromatic dynamic ranges.

17. (Original) The apparatus of claim 16, wherein the chromatic dynamic range for each pixel is a function of minimum and maximum chroma values of a local pixel neighborhood; and wherein the processor determines local chromatic dynamic ranges on a pixel-by-pixel basis.

18. (Original) The apparatus of claim 17, wherein the processor scales the chrominance values of a pixel by the ratio C'/C if the original chroma value (C) of the pixel is modified, where C' is the new chroma value.

19. (Currently amended) The apparatus of claim 17, wherein the processor modifies a chroma value of a pixel to no more than a ~~the minimum~~chromatic modulus (C_0) derived from ~~of~~ the local neighborhood ~~if the pixel has a high luminance, and wherein the processor does not modify the chroma value of a pixel if the pixel has a small dynamic range~~.

20. (Currently amended) Apparatus for reducing chromatic bleeding artifacts in a digital image, the apparatus comprising a processor for modifying chrominance values of at least some pixels in the digital image, the pixels being modified ~~The apparatus of claim 17, wherein the chrominance values of at least some pixels are modified~~ by $C' = C - f(Y,D)\cdot(C - C_0)$, where C' is the new chroma value of the pixel, C is the unmodified chroma value of the pixel, Y is the luminance of the pixel, D is the local chromatic dynamic range, C_0 is a chromatic modulus having a value between zero and C_m, C_m is the minimum chroma of the local neighborhood for the pixel, and $f(Y,D)$ is a parametric expression that determines the amount of relative chroma reduction and that ranges between 0 and 1.

21. (Original) The apparatus of claim 20, wherein $f(Y,D)$ complies with $f(Y,D) \rightarrow 1$ for $Y \rightarrow 1$; and $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$.

22. (Original) The apparatus of claim 21, wherein $f(Y,D)$ also complies with $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$ and $Y \rightarrow 1$.

23. (Original) The apparatus of claim 20, wherein $C_0 = \max[C_m - D, 0]$.

24. (Original) The apparatus of claim 20, wherein the modulus $C_0=C_m$.

25. (Original) The apparatus of claim 20, wherein $C_0=0$.

26. (Original) The apparatus of claim 20, wherein $f(Y,D)=\max\left[1-\alpha(\frac{1-Y}{D}),0\right]$, where α is a positive term.

27. (Original) The apparatus of claim 26, wherein C'=C if $Y<(1-D/\alpha)$.

28. (Original) The apparatus of claim 16, wherein the processor reconstructs the digital image from subsampled chrominance values; and wherein the processor determines the chromatic dynamic ranges from the subsampled chrominance values.

29. (Currently amended) An article ~~of manufacture~~ for a processor, the article comprising:

computer memory; and

a program stored in the memory, the program, when executed, causing the processor to reduce chromatic bleeding artifacts in a digital image by selectively reducing ~~modifying~~ chrominance values of ~~at least some~~ pixels in the digital image, the chrominance value of a pixel ~~pixels~~ being selectively reduced ~~modified~~ according to chromatic differences in a local neighborhood of the pixel~~to its luminance values and chromatic dynamic range~~.

30. (New) The method of claim 1, further comprising using a luminance value of a pixel being modified to determine an amount of chromatic reduction.

31. (New) The method of claim 30, wherein a chroma value of a pixel is modified to no more than a chromatic modulus (C_0) if the pixel has a high

luminance, and wherein the chroma value of a pixel is not modified if the pixel has a small dynamic range.

32. (New) The apparatus of claim 16, further comprising using a luminance value of a pixel being modified to determine an amount of chromatic reduction.

33. (New) The apparatus of claim 16, wherein a chroma value of a pixel is modified to no more than a chromatic modulus (C_0) if the pixel has a high luminance, and wherein the chroma value of a pixel is not modified if the pixel has a small dynamic range.

34. (New) The article of claim 29, wherein the program further instructs the processor to use a luminance value of a pixel being modified to modify an amount of chromatic reduction.

35. (New) The article of claim 34, wherein the program instructs the processor to modify a chrominance value of a pixel to no more than a chromatic modulus, the chromatic modulus derived from the local neighborhood.

36. (New) An article for a processor, the article comprising memory encoded with instructions for instructing the processor to reduce chromatic bleeding artifacts in a digital image by modifying chrominance values of at least some pixels in the digital image, the pixels being modified by $C' = C - f(Y,D)\cdot(C - C_0)$, where C' is the new chroma value of the pixel, C is the unmodified chroma value of the pixel, Y is the luminance of the pixel, D is the local chromatic dynamic range, C_0 is a chromatic modulus having a value between zero and C_m, C_m is the minimum chroma of the local neighborhood for the pixel, and $f(Y,D)$ is a parametric expression that determines the amount of relative chroma reduction and that ranges between 0 and 1.

37. (New) The article of claim 34, wherein $f(Y,D)$ complies with $f(Y,D) \rightarrow 1$ for $Y \rightarrow 1$; and $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$.

38. (New) The article of claim 35, wherein $f(Y,D)$ also complies with $f(Y,D) \rightarrow 0$ for $D \rightarrow 0$ and $Y \rightarrow 1$.

39. (New) The article of claim 34, wherein $C_0 = \max[C_m - D, 0]$.

40. (New) The article of claim 34, wherein the modulus $C_0 = C_m$.

41. (New) The article of claim 34, wherein $C_0 = 0$.

42. (New) The article of claim 34, wherein $f(Y,D) = \max\left[1 - \alpha\left(\frac{1-Y}{D}\right), 0\right]$, where α is a positive term.

43. (New) The article of claim 40, wherein $C' = C$ if $Y < (1 - D/\alpha)$.